

# B R E V I O R A

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### REMARKS ON SOME FORMS OF *CINCLUS* (AVES)

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The genus *Cinclus* was studied by us independently. Greenway studied the collections in the Museum of Comparative Zoology and in the American Museum of Natural History in preparation of a part of the Check-list of the Birds of the World. Vaurie studied the collection of the American Museum in preparation of a check-list of the Palearctic avifauna (1958, in press), and published some notes on this genus on two occasions (1951 and 1955). Greenway deferred publication. Later he sent the draft of his paper to Vaurie, who in 1957 examined the material in several European museums. We have decided to present our conclusions jointly.

#### CINCLUS CINCLUS

Two main types are represented on the European continent: one which has a blackish breast, and the other in which the breast is several shades of brown. Some populations are constant or relatively constant, as in Scandinavia and northern Europe where the birds (nominate *cinclus*) are blackish but other populations vary individually. The latter may consist of individuals that are blackish and very similar, if not identical, with nominate *cinclus* or of individuals in which the color of the breast varies from dark and dull brown to rather bright rufous. In some regions, as in the Alps and to some extent in Spain, the birds inhabiting a watershed may be blackish, whereas in a contiguous watershed they are brown and these blackish, or

brown, populations may resemble other populations from which they are widely separated. For instance, blackish birds inhabit Scandinavia and northwestern Spain and brown birds inhabit Germany and southern Spain. On the other hand, the populations may grade more or less smoothly into one another, as from southeastern Germany southeastward through central Europe.

These complicating factors render a division for nomenclatural purposes somewhat arbitrary and Vaurie was, at first, inclined not to recognize any subspecies. However, all the birds of Scandinavia and northern Europe are blackish and identifiable at a glance from the brown-breasted ones from farther south, and the geographical variation, though not constant in central and southern Europe, shows several trends. In the end, Vaurie (1955) recognized five subspecies. These five subspecies are also widely recognized by conservative authors and are as follows: nominate *cinclus* Linnaeus, 1758, type locality, Sweden; *aquaticus* Bechstein, 1803, type locality, Germany; *pyrenaicus* Dresser, 1892, type locality, Pyrenees; *meridionalis* Brehm, 1856, type locality, Carinthia, Austria; and *orientalis* Stresemann, 1919, type locality, Macedonia.

There is, however, little agreement about the limits of their ranges. Hartert (1910) stated that the range of nominate *cinclus* was Scandinavia and western Russia south to East Prussia; Witherby (1922, p. 341) added the Cantabrian Mountains of northwestern Spain, and in 1928 (pp. 618-620) the mountains of central Spain; while Vaurie (1955) referred all the birds of the Iberian Peninsula to *pyrenaicus* which Hartert had restricted only to the Pyrenees. Hartert (1910) stated that the birds of France were *aquaticus* (except in the Pyrenees and in the southwest where they are replaced by *meridionalis*) but Mayaud (1953, p. 49) includes Brittany and the Massif Central of France in the distribution of *pyrenaicus*, stating that in the southeast the populations show a tendency toward *meridionalis*. Hartert (1922) recognized *orientalis* for southeastern Europe, a region which he had formerly included in the range of *meridionalis*, while Rokitsansky (1939) extended the range of *orientalis* westward to Moravia in central Europe. Finally, von Burg (1924) and Troller (1935) described six new forms from the

Alps, and Floericke (1926, Mitt. Vogelw., p. 78. Non vid.) one from northern Portugal which he named *atroventer*. The latter, the type locality of which is Serra do Gerez, is a very black form.

It is evident from the foregoing that students of this group have often disagreed (especially regarding the classification and distribution of the populations of France, the Alps, Balkans, and Iberian Peninsula), and Greenway came to the conclusion that it would be best to recognize only two subspecies: a blackish one (nominate *cinclus*), and a brown one (*aquaticus*). He was aware that the range of the black form is discontinuous, and also that a more realistic treatment might include but a single subspecies. Black and brown forms are, however, separable at a glance.

Vaurie, after studying the material in the European collections, now shares the opinion of Greenway. We consider that it is best to synonymize *pyrenaicus*, *sapsworthi*, *atroventer*, and *amphitryon* with nominate *cinclus*, and to synonymize *meridionalis*, *orientalis*, *olympicus*, and the forms described by von Burg and Troller, with *aquaticus*. *Sapsworthi* was described by Arriagoni in 1902 from Corsica but we find that good series in New York and Europe from Corsica and Sardinia are not separable from specimens from the Pyrenees. *Olympicus* Madarasz, 1903, type locality, Cyprus, and *amphitryon* Neumann and Paludan, 1937, type locality, Lasistan, northeastern Turkey, will be discussed below.

The populations of Austria and Italy (*meridionalis*), or from the Balkans (*orientalis*), vary too much individually to warrant nomenclatural recognition as about one third to one half or more of the specimens examined cannot be distinguished from typical *aquaticus* of Germany. Professor Stresemann, with whom Vaurie has discussed this question, is now also of the opinion that *orientalis* is not sufficiently constant and is best synonymized with *aquaticus*.

The subspecific status of the birds of the Iberian Peninsula and Pyrenees is the least clear and has been the subject of most comment. The result of Vaurie's examination of relevant material in European collections is set forth below; that in New York was discussed in 1955.

Eleven specimens from the Pyrenees support the statement made by Vaurie in 1955 after he had examined 25 birds that are

virtual topotypes of *pyrenaicus*. As stated then, this population varies individually, but "in series . . . differs from nominate *cinclus* by being not so black, browner above and below including the crown and nape, which are distinctly paler, and in fresh plumage by having the gray edges of the feathers of the back better developed." Whistler and Harrison (1930, p. 467) stated that their three specimens from the Pyrenees "cannot be separated from Swedish topotypes," but much larger series show that Witherby (1928) is correct when he states that the birds of the Pyrenees though "very much like" nominate *cinclus* are "not quite so black." Witherby recognized *pyrenaicus* but we believe it is best to synonymize it with nominate *cinclus*, as it is impossible to separate the birds of the Pyrenees from specimens which, in series, are even more similar to nominate *cinclus*.

Nine specimens from the province of Santander are very similar above to the birds of the Pyrenees, including the prominent gray edges, but in series average a little more blackish, especially below. Three specimens from Riaño, northern León, are still blacker. These three match four from the Serra do Gerez in northern Portugal (topotypes of *atroventer*), one from Serra da Estrela, also in northern Portugal, three from Candeleda, Sierra de Gredos, Avila, and twelve from Lagunilla, Bejar, Salamanca. All these are very blackish below and similar to nominate *cinclus* but not quite identical. They average deeper black below but above they are more similar to the birds from Santander and the Pyrenees, the crown and nape averaging slightly more rufous and the gray edges of the feathers being, as a rule, better developed than in nominate *cinclus*.

However, individuals are found in northwestern or central Spain that are not similar to nominate *cinclus*. One specimen from Santo Domingo de Silos, Burgos, and also one from Candeleda are browner. Of three specimens from San Ildefonso la Granja on the northern side of the Sierra de Guadarrama, one is similar to the black birds from Riaño, though very slightly browner, and the other two are a little browner still. One from Cecedilla, on the southern side of the Sierra de Guadarrama, is distinctly browner than the foregoing and Witherby (1928)

remarked that it is intermediate between nominate *cinclus* and *aquaticus*, adding that one from nearby Escorial "is like *aquaticus*."

This last specimen is now in the collection of the American Museum of Natural History and was examined by Vaurie in 1955 together with two from the Sierra Nevada in southern Spain. These three are identical and not separable from *aquaticus*. Five other skins, examined in 1957, from the Sierra Nevada are also very brown and identical with *aquaticus*.

In short, it appears that the population of southern Spain is constant and not separable from *aquaticus*. The birds of central Spain and the Pyrenees vary individually but, taken as a series, these populations are closer to nominate *cinclus* than they are to *aquaticus*, while in northwestern Spain and northern Portugal the populations seem constant again, and, though not quite identical, are best called nominate *cinclus* as they are so similar to it.

Two of the additional specimens from the Sierra Nevada were collected in 1955 by Dr. G. Niethammer and are in the collection of the Bonn Museum. This museum possesses also the type and paratypes of *amphitryon*. This series is identical with nominate *cinclus* in coloration, as stated by Neumann and Paludan (1937), who separated it from the latter on the basis that it had a "somewhat shorter wing and an almost imperceptibly thinner bill" (trans.). The bill shows a tendency to be more slender, but the difference is extremely slight and not of taxonomic importance, and the wing measurements show too much overlap to warrant the recognition of *amphitryon*. According to Vaurie, the wing length measures 93, 93, 94, 94 (+, molting), 95, 98, 98 (95) in the males from northeastern Turkey, as against 92, 94, 95, 95, 95, 96, 96, 97, 98, 98, 99, 100 (96.3) in males from Scandinavia.

Two other forms (*olympicus* from Cyprus, and *uralensis* Serebrovski, 1927, type locality, Urals) require brief comment though we are handicapped by the lack of adequate material.

The material that we have seen from Cyprus consists of three rather worn and not too well prepared specimens collected in the spring of 1906. Vaurie (1955) stated he could match them with specimens of *orientalis*, but in Greenway's opinion they resemble *caucasicus* rather than Macedonian birds. Hartert (1910), who had the same specimens, stated that he "was not



able" to separate them from *caucasicus* but cautioned that more and better prepared material was necessary from Cyprus. Nevertheless, he synonymized *olympicus* with *caucasicus*, though with a query. The name *olympicus* has remained a synonym of *caucasicus* ever since but, unfortunately, *olympicus* was described in January 1903 as against December of the same year for *caucasicus*; it should replace the latter if indeed the populations of Cyprus and the Caucasus are not separable. Fresher and more abundant material from Cyprus is necessary, however, to establish beyond dispute that the two forms are not separable. We therefore recognize provisionally the validity of *olympicus*.

Serebrovski (1927) has separated the population of the Urals as *uralensis*, stating that it differs from nominate *cinclus* by being paler and more brownish above and below, but is darker above and less rufous below than *aquaticus*. The validity of *uralensis* has been recognized by Hartert and Steinbacher (1935), Dementiev (1935), and Portenko (1937), but Sudilovskaya (1954) considers that *uralensis* is a synonym of nominate *cinclus*. Her opinion, however, may be extreme as she also synonymizes *caucasicus* (which in our opinion is perfectly valid) with nominate *cinclus*. The only specimen of *uralensis* that we have seen is not fully adult but shows the differences mentioned by Serebrovski when compared to specimens in the same plumage. The population of the Urals is very widely isolated from all the other populations of the species and may well be distinct.

#### CINCLUS PALLASII

As Vaurie (1951) has remarked, there are four specimens of the Brown Dipper, in the collection of the American Museum of Natural History, having gray rumps contrasting with brown backs. These were taken in Amurland and near Mukden.

It would perhaps be possible to separate on the basis of such material the populations of extreme eastern Siberia and Japan, on the one hand, from those of China and Formosa, on the other. The probability is strong that this one difference in color of rump is due to a single gene, however, and a theory that a single population inhabits eastern Asia, Japan, Formosa, and northern Indochina is probably the most correct one. To be sure, there is

a small size difference, as is shown in Table 1, below. That this is significant may be doubted. Of a series of 15 kinds, 6 are intermediate. Application of a coefficient of difference test shows a 20 per cent overlap.

TABLE 1  
WING (in mm.)

<i>Amurland</i>	<i>China</i>	<i>Formosa</i>
94.0 1	104.0 1	96.0 1
102.0 1	105.0 1	102.0 1
103.0 1	106.0 1	103.0 1
106.0 1	107.0 1	105.0 1
	108.0 1	
	109.0 2	Ef x = 406.0
	110.0 3	n = 4
	111.0 1	m = 101.50
	114.0 1	= 3.87
	120.0 1	
	121.0 1	

Japanese populations are intermediate to some extent. Of a series of 13 specimens from Japan and Amurland, 5 are impossible to diagnose as belonging to one population or the other. In other words, only 62 per cent can be recognized on the character of the gray versus brown rump. Certain Japanese specimens have a somewhat more reddish tinge than those from the Asiatic mainland, but only 65 per cent of the series at hand can be distinguished by this character.

Vaurie (1955), recognized only two subspecies: nominate *pallasii* Temminck, 1820, type locality, "Crimea," but error for Okhota River, eastern Siberia, as shown by Stresemann (1948, pp. 115, 126); and *tenuirostris* Bonaparte, 1850, type locality, central Asia. Among the forms synonymized with nominate *pallasii* were *wilderi* La Touche, 1925, type locality, Hopeh, and *dorjei* Kinnear, 1937, type locality, eastern Bhutan.

The two co-types of *wilderi* from the Eastern Tombs near Peking have brown rumps and do not appear to differ in any way from birds of western and southern China (see above).

The affinities of *dorjei* were not made too clear by Kinnear (1937, p. 263), and Professor Stresemann kindly pointed out to Vaurie that the latter was probably wrong in considering that *dorjei* was not separable from nominate *pallasii*. In Stresemann's opinion *dorjei* was probably a valid race, or, if not, a synonym of *tenuirostris* rather than of nominate *pallasii*. Examination of the original series shows that Stresemann is correct and that *dorjei* is valid.

Its diagnosis and range, as given by Vaurie (1958) are: "Darker than *tenuirostris* in all plumages but paler than nominate *pallasii*. This race, though intermediate in coloration, is closer to *tenuirostris*. Range: Eastern Himalayas, east of *tenuirostris* [which ranges eastward about as far as northern Sikkim where it grades into *dorjei*], hills of Assam south of the Brahmaputra, and higher hills and mountains of Burma south to the Chin Hills in the west and the Shan States in the east, to northern Siam and probably to neighboring northern Yunnan though there are no records."

#### CINCLUS SCHULTZI

*Cinclus schultzi* Cabanis of the mountains of northwestern Argentina has been treated as a distinct species by all authors. In view of the intraspecific variation in other parts of the world it would appear to reflect the probable biological truth better to treat it as a subspecies of *leucocephalus*. Compare *Cinclus cinclus leucogaster* of Afghanistan with *caucasicus* and *cashmeriensis*, for example.

The brown breast of *schultzi* replaces the white of the more northern form (*leucocephalus*). The white wing bar of *schultzi* is not consistently of greater extent. It is a grayer bird and a very distinct subspecies.



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## LITERATURE CITED

ANONYMOUS [= von Burg]

1924. Die schweizerischen Wasserramseln. "Der Weidmann" (Bülach-Zürich), 6(24): 7.

DEMENTIEV, GEORGES P.

1935. Systema Avium Rossicarum. L'Oiseau, p. 456.

HARTERT, ERNST

1910. Die Vögel der paläarktischen Fauna. 1(6): 788-795.  
1922. *Op. cit.*, 3:2172.

HARTERT, ERNST AND FRIEDRICH STEINBACHER

1935. Die Vögel der paläarktischen Fauna. Ergänzungsband, p. 344.

KINNEAR, N. B.

1937. In Ludlow and Kinnear, The birds of Bhutan and adjacent territories of Sikkim and Tibet, pt. 2. Ibis, 249-293.

MAYAUD, NOËL

1953. Liste des oiseaux de France. Alauda, 21(1):1-63.

NEUMANN, OSCAR, AND KNUD PALUDAN

1937. Zwei neue geographische Rassen aus Klein-Asien. Orn. Monatsb., 45:15-16.

PORTENKO, L. A.

1937. Fauna Ptits Vnepoliar. Chasti Severnogo Urals. Moscow-Leningrad. Akad. Nauk SSSR, p. 164.

ROKITANSKY, G. F. VON

1939. Zur Verbreitung der Wasserramseln, speziell der Rasse *Cinclus cinclus orientalis* Stres. Ann. Naturhist. Mus. Wien, 49:282-294.

## SEREPROVSKI, P.

1927. New races of Palearctic birds. Doklady Akad. Nauk SSSR, 1927 (A):325-326.

## STRESEMANN, ERWIN

1948. Dr. C. H. Mercks ornithologische Aufzeichnungen während der Billingschen Expedition von Ochotsk nach Alaska (1787-1791). Zool. Jahrb., Abt. für Syst., 78(1):97-132.

## SUDILOVSKAYA, A. M.

1954. In Dementiev and Gladkov (editors); Ptitsy Sovetskogo Soiuza. Moscow, 6:672.

## TROLLER, JULIUS

1935. Die Wasseramsel, *Cinclus cinclus* L., und ihre Unterarten in der Schweiz. Arch. Suisses d'Ornith., 1(6):193-224.

## VAURIE, CHARLES

1951. Notes on the wrens and dippers of western Asia and India. Amer. Mus. Novitates, 1485:9-19.  
1955. Systematic notes on Palearctic birds, no. 16. Troglodytinae, Cinclidae, and Prunellidae. Amer. Mus. Novitates, 1751:12-17.  
1958 (in press). The birds of the Palearctic Fauna, part 1. Passeriformes. London, H. F. and G. Witherby.

## WHISTLER, HUGH, AND JAMES M. HARRISON

1930. Some autumn observations of the avifauna of the western and central Pyrenees. Ibis, 453-470.

## WITHERBY, H. F.

1922. Results of a collecting trip in the Cantabrian Mountains, northern Spain. Ibis, pp. 323-345.  
1928. On the birds of central Spain with some notes on those of south-east Spain. Ibis, pp. 385-436, 587-663.